FACT SHEET

GENERAL PERMIT FOR FACILITIES/OPERATIONS THAT GENERATE, TREAT, AND/OR USE/DISPOSE OF SEWAGE SLUDGE BY MEANS OF LAND APPLICATION, LANDFILL, AND SURFACE DISPOSAL IN REGION VIII OF THE ENVIRONMENTAL PROTECTION AGENCY

SSG65B###

INTRODUCTION: This fact sheet is for the general permits that will be issued in Region VIII for the permitting of facilities/operations that generate, treat, and/or use/dispose of sewage sludge by means of land application, landfill, and surface disposal. In each state, except for South Dakota and Utah, separate general permits will be issued for the state and Indian country. Both the State of South Dakota and the State of Utah currently are the only States in Region VIII that have been authorized to administer the biosolids (sludge) program. Therefore general permits will be issued only for Indian country in South Dakota and Utah. The general permit for Indian country in Utah does not include the portions of the Goshute Indian Reservation and the Navajo Indian Reservation in Utah because the permitting activities for these reservations are done by Region IX of EPA. Because the State of Colorado has not been delegated permitting authority for Federal Facilities, a separate general permit will be issued for Federal Facilities in Colorado, except for those located in Indian country.

On June 21, 2000 and September 21, 2000, U.S. District Judge Donald W. Molloy issued orders stating that until all necessary total maximum daily loads under Section 303(d) of the Clean Water Act are established for a particular water quality limited segment, the EPA is not to issue any new permits or increase permitted discharges under the NPDES program. (The orders were issued in the lawsuit Friends of the Wild Swan, Inc., *et al.*, v. U.S. E.P.A., *et al.*, CV 97-35-M-DWM, District of Montana, Missoula Division.) EPA finds that the issuance of these proposed general permits does not conflict with this order, because (1) the proposed permits would not authorize any point source discharges into waters of the United States and (2) as discussed under the "Protection of Public Health and The Environment" section of this Fact Sheet, the use and/or disposal of sewage sludge in compliance with the conditions of these permits is not likely to have any adverse effect on any waterbody in Montana that has been listed under Section 303(d) of the Clean Water Act.

The permit number is in the format of SSG65B###, where:

SS State abbreviation and will be either CO, MT, ND, SD, UT, or WY;
G Indicates general permit;
65 Indicates sludge;
B Will be either the number 0, 1, or 2, where:

- 0 will apply to the state except for Indian country (and Federal Facilities in Colorado);
- 1 Indian country in the state; or,
- 2 Federal Facilities in the State of Colorado, except those located in Indian country;

a number assigned to a specific facility/operation covered under the permit.

The general permits covered under this Fact Sheet are listed below by state.

State	Permit No.	Area Covered by the General Permit

Colorado:		
	COG650000	State of Colorado except for Federal Facilities and Indian country.
	COG651000	Indian country within the State of Colorado and the portions of the Ute Mountain Indian Reservation located within the States of New Mexico and Utah.
	COG652000	Federal Facilities within the State of Colorado, except those located on Indian country, which are covered under permit COG51000.
Montana:		
	MTG650000	State of Montana except for Indian country.
	MTG651000	Indian country within the State of Montana.
North Dakota:		
	NDG650000	State of North Dakota except for Indian country.
	NDG651000	Indian country within the State of North Dakota (except for Indian country located within the former boundaries of the Lake Traverse Indian Reservation, which is covered under permit SDG651000) and that portion of the Standing Rock Indian Reservation located within the State of South Dakota.
South Dakota:		
	SDG651000	Indian country within the State of South Dakota (except for the Standing Rock Indian Reservation, which is covered under permit NDG651000), that portion of the Pine Ridge Indian Reservation located within the State of Nebraska, and Indian country located within the State of North Dakota within the former boundaries of the Lake Traverse Indian Reservation.
Utah:		
	UTG651000	Indian country within the State of Utah except for the Ute Mountain Indian Reservation (which is covered under permit COG651000), the Goshute Indian Reservation, and the Navajo Indian Reservation.
Wyoming:		
	WYG650000	State of Wyoming except for Indian country.
	WYG651000	Indian country within the State of Wyoming

A list of the reservations covered by the general permits and the mailing addresses and telephone numbers of the environmental directors for those reservations are included in Attachment 1 of this Fact Sheet. The names of the environmental directors are not included as they periodically change.

The general permits are intended to cover the generation, treatment, and/or the use/disposal of sewage sludge by means of land application, landfill, and surface disposal.
Facilities or operations that incinerate sewage sludge are not eligible for coverage under these general permits. The generation, treatment, and use/disposal of sewage sludge usually occurs under the control of one organization, normally the one that operates the treatment works that generated the sewage sludge. However, there are situations where the sewage sludge may be generated at one facility and the treatment and/or use disposal occurs elsewhere under the control of others. An example of this would be a city where there are two sewage treatment plants (STP) and the sewage sludge generated at one STP is sent to the other STP for final treatment and use/disposal. Both of the STPs require permit coverage, but the permit requirements would be different for each STP. There are some facilities/operations that do not generate any sewage sludge, but receive sewage sludge from other facilities and then provide the final treatment and use/disposal of the sewage sludge.

In order to provide some flexibility to address different situations, coverage under the general permits will fall into one of the following three categories:

Category 1. Facilities/operations that generate and/or partially treat sewage sludge, but do not use/dispose of sewage sludge. The sewage sludge is sent elsewhere for final treatment and use/disposal. This does not apply to wastewater lagoon systems unless the facility is notified to apply for coverage under this category.

Category 2. Facilities/operations that use/dispose of sewage sludge and may also generate and/or treat sewage sludge. Facilities/operations that treat sewage sludge and have someone else use/dispose of the sewage sludge without further treatment (e.g., contractors land applying sewage sludge) are considered to be in this category. The applicant may apply for coverage under one or more of the following subcategories:

Subcategory 2.a. Facilities/operations that land apply sewage sludge and may also generate and/or treat sewage sludge.

Subcategory 2.b. Facilities/operations that landfill sewage sludge and may also generate and/or treat sewage sludge.

Subcategory 2.c. Facilities/operations that surface dispose of sewage sludge and may also generate and/or treat sewage sludge.

Category 3. Wastewater lagoon systems that need to land apply sewage sludge on an occasional, restricted basis. Under this category land application of sewage sludge is limited to once every twenty (20) years per site and the application rate shall not exceed one dry metric ton per acre unless prior written approval is granted by the permit issuing authority.

Coverage under the general permit will be limited to one of the three categories, but coverage may be granted to one or more subcategories under Category 2. In applying for coverage under the general permit, the applicant will be required to specify under which category or subcategory(s) coverage is being requested. However, the permit issuing authority will have the final determination as to which category or subcategory(s) the coverage will be granted.

In Region VIII there are many wastewater lagoon systems that only remove sewage sludge from the lagoon system on an infrequent basis. It is the intention of Region VIII not to require these wastewater lagoon systems to apply for permit coverage under Category 1 unless the facility/operation is notified that it must apply for permit coverage under that category. Sewage sludge may be removed from a wastewater lagoon systems and stored on-site for up to two years without requiring permit coverage. However, the use/disposal of that sewage sludge requires permit coverage and the facility and/or operation must apply for the appropriate permit coverage under Category 2 or Category 3.

There are situations where sewage sludge related activities may occur in more than one permitting jurisdiction (e.g., generate and treat in one state and use/dispose in another state, etc.) Coverage under each general permit is limited to the geographical area covered by that permit. If the generation, treatment, and/or use/disposal of the sewage sludge occurs in more than one permitting jurisdiction, it most likely will be necessary to obtain permit coverage in each permitting jurisdiction.

OBTAINING COVERAGE: Coverage for eligible facilities/operations under the general permits may be obtained by one of the following three methods:

1. A complete Notice of Intent (NOI) is submitted in accordance with the requirements of Part 2 of the permit and the applicant receives a written notice of coverage from the permit issuing authority;

2. A complete application has been submitted for renewal of an individual permit issued by EPA for the generation, treatment, and/or use disposal of sewage sludge and the applicant receives written notification of coverage from the permit issuing authority; or

3. A facility/operation is notified by EPA that its sewage sludge generation, treatment, and/or use/disposal is covered by this general permit even if the facility/operation has not submitted a NOI to be covered by the general permit.

Coverage under this general permit begins upon receipt of the written notice of coverage from the permit issuing authority. Coverage for additional land application sites (not identified in the original NOI) begins 45 days after submittal of the required information unless the permittee is notified otherwise by the permit issuing authority.

Some facilities/operations have been covered by individual permits issued by EPA for only sewage sludge related activities. It is the intent of Region VIII that most, if not all of these facilities/operations will be covered under the applicable general permit and the individual permits will not be reissued. Although the general permits will not have the same specificity as an individual permit for a given facility/operation, they will have essentially the same requirements. By using general permits, the administrative burden and costs of issuing permits will be decreased significantly. The burden on the permittees should be the same or somewhat less than with individual permits. In addition, permit coverage can be provided much quicker once the general permits are issued. Because some facilities/operations have already applied for renewal of their individual permits and the information in those applications is very similar to that requested in the NOI, it was decided that a complete application would suffice for submittal of an NOI.

A facility/operation that has an EPA issued individual permit, other than an individual permit required under Part 1.6 of the general permits, may request that the individual permit be revoked and that the coverage be provided under the applicable general permit.

The Director may deny coverage under this general permit and require submittal of an application for an individual NPDES permit based on a review of the NOI and/or other information.

DEADLINES FOR APPLYING FOR PERMIT COVERAGE: Part 2.1 of the general permits contains the deadlines for applying for permit coverage. The deadline for a specific facility/operation depends on several factors, including the following:

1. Are the sewage sludge related activities for an existing or a new facility/operation?

2. Is the facility a wastewater lagoon system that normally does not use/dispose of sewage sludge?

3. Does the facility/operation currently have permit coverage for its sewage sludge related

activities?

4. If the facility has permit coverage for its sewage sludge related activities, when does the permit expire?

Excluding wastewater lagoon systems, most existing facilities/operations that belong in either Category 1 or Category 2 must either submit an NOI within ninety (90) days after the effective date of this permit or have already submitted a complete application for renewal of an individual permit for the generation, treatment, and/or use/disposal of sewage sludge. An exception would be those facilities/operations that have a current permit that will expire more than 180 days after the effective date of the general permit. Those facilities will be given until 90 days after the effective date of the general permit or at least 180 days before the expiration date of their current permit to apply, whichever occurs later.

The operators of wastewater lagoon systems that normally do not use/dispose of sewage sludge and want to use/dispose of their sewage sludge under the provisions of Category 2 must submit a complete NOI at least 90 days before the planned start of the use/disposal of the sewage sludge. If a wastewater lagoon system wants to land apply sewage sludge under the provisions of Category 3, it must submit a complete NOI at least 30 days before the planned start of the land application.

Wastewater lagoon systems that do not routinely use/dispose of sewage sludge and have been notified that they need to apply for permit coverage under Category 1 or Category 2 will have 90 days to submit a complete NOI after being notified. It is anticipated that notification of wastewater lagoon systems will be done on a limited, case-by-case basis. A wastewater lagoon systems does not have to apply for permit coverage if it does not intend to use/dispose of sewage sludge in the near future and it has not been notified that it has to apply for permit coverage.

New facilities/operations that will belong in either Category 1 or Category 2 are required to submit an NOI at least 90 days before the planned start of the generation, treatment and/or use/disposal of the sewage sludge. However, there is a provision that the required sludge monitoring data may be submitted later if the data are not yet available. This provision is limited to those facilities/operations that treat the sewage sludge to the requirements for use/disposal. The new operations that use/dispose of sewage sludge, but do not provide the treatment necessary for meeting the use/disposal requirements are required to submit the data with the NOI.

CONTENTS OF NOTICE OF INTENT: The requirements of the NOI are given in Part 2.2 of the permit. There is not a form for the NOI. The information requested in the NOI may be submitted in one of the following three methods:

- Letter format;

- Combination of hard (printed) copy using EPA's Biosolids Data Management System (BDMS) and in letter format. The letter format shall include the required information not included in the BDMS and the certification as given in Part 2.2.4 (The BDMS program may be downloaded from the internet at http://www.epa.gov/region08/water/wastewater/biohome/biohome.html); or

- Combination of letter format and electronic format. The letter format portion of the submittal shall include the information required in Part 2.2.1, the required information that is not submitted

in electronic format, a description of the electronic format used, a listing of the information included in electronic format, and the certification as given in Part 2.2.4. The information submitted in electronic format shall be in either BDMS, a *Lotus® 123* spreadsheet (version 9.6 or older), a *Microsoft® Excel* spreadsheet (version Office 2000 or older), or a *Microsoft® Access* database (version Office 2000 or older). The electronic files must be on either CD-ROMs or 3 ½ inch floppy disks. The electronic files must be in the form that they can be opened by the aforementioned software programs and the data viewed and/or printed in those programs.

The provision for submitting data in electronic format is primarily intended for those few facilities/operations with a very large number of land application sites. The amount of paperwork involved with those facilities/operations would be overwhelming for both the applicants and the permit issuing authority.

Because the information needed for the applicants under the three different categories varies, the NOI was divided into four different parts, as shown below:

Part 2.2.1	Basic Information - All Applicants Complete
Part 2.2.2	Additional Information for Applicants for Coverage Under Category 2
Part 2.2.2.1	Methods of use/disposal - All of Category 2 complete
Part 2.2.2.2	Use of contract appliers/haulers - All Category 2 complete
Part 2.2.2.3	Applicants to land apply sewage sludge complete
Part 2.2.2.4	Applicants to landfill sewage sludge complete
Part 2.2.2.5	Applicants to surface dispose of sewage sludge complete
Part 2.2.3	Additional Information for Applicants for Coverage Under Category 3
Part 2.2.4	Certification Statement and Who Signs - All Applicants Complete

Most of the information requested in the first part of the NOI is basic (names, locations, etc.,) and applies to all applicants. The exception is Part 2.2.1.15, which applies only to those applicants requesting coverage under Category 1.

Part 2.2.2 is for applicants requesting coverage under Category 2. All of those applicants must complete Parts 2.2.2.1 (information on use/disposal practices) & 2 (information on the use of contract haulers and appliers).

Applicants for coverage to land apply sewage sludge must complete Part 2.2.2.3, which requests information on active land application sites; data on metals, total solids, nitrogen and phosphorus for the sewage sludge and soils at the land application sites; vector attraction reduction requirements; and pathogen requirements. The analytical data for the sewage sludge shall be based on a minimum of three sampling events and the data shall be no more than four and one-half years old. These requirements are similar to those in EPA's new applications forms for sewage sludge (Form 2S). New facilities/operations that treat sewage sludge but do not yet have the required sewage sludge monitoring data shall submit the required data separately within six (6) months after the start of land application of sewage sludge. The data shall be based on a minimum of three (3) sampling events and the samples shall be collected in accordance with the requirements of Part 4.1.4 of the permit. New operations that will land apply sewage sludge, but do not treat it, are required to submit all of the required data with the NOI. The necessary data should be available from the facility/operation that treats the sewage sludge. When a permittee wants to add a include a new land application site to coverage under the general permit more than six months after start of coverage under this permit, the permittee shall submit an addendum to its NOI with the required information at least 45 days before the planned start of land application at the site.

Coverage for additional land application sites (not identified in the original NOI) begins 45 days after submittal of the required information unless the permittee is notified otherwise by the permit issuing authority.

Part 2.2.2.3.5 describes the requirements for the data on soils that must be provided for each land application site. Information must be provided for certain metals, total solids, soil pH, nitrate nitrogen, and available phosphorus. The data are to be no more than 4 ½ years old unless approval for the use of older data is granted by the permit issuing authority. Older soils data for metals may be acceptable, especially if has been no prior application of sewage sludge at the site. Older soils data for nitrogen and phosphorus generally will not be acceptable. For most sites a minimum of 6 representative samples of one foot depth each for each 320 (or less) acre area are to be collected and composited into one sample. For those land application sites that have a length to width ratio greater than 32:1 and are more than 4.0 miles long, the applicant is to submit a proposed sampling plan for approval. This provision is intended where land application of sewage sludge will involve such things as highway projects, trails, establishing filter strips along drainage ways, etc. There is an exemption from the soil sampling requirements for small (less than 5 acres) landscaping sites at wastewater treatment plants and sludge treatment facility grounds, if not collacted, and where less than 1 dry metric ton of sewage sludge has been or will be applied per acre per year. Provided the sewage sludge meets the metals limitations, pathogen requirements and vector attraction reduction requirements for land application, the land application of sewage sludge at that rate on 5 acres or less should have insignificant environmental impacts.

The deadline for submitting the data for each application site depends on whether it is a new or exisiting site and when the application sewage sludge will begin. That information is given in Parts 2.2.2.3.5.1, 2, and 3. The provision for existing sites of submitting the data for 20% of the sites over a five year period is intended primarily for the few facilities/operations that have a very large number of active land application sites.

In addition to soils information about the land application site, the applicant is required to provide ground water information (see Part 2.2.2.3.6) for each new land application sites. For existing land application sites the permittee is required to provide the same data within one year after coverage begins under the general permit (see Part 4.2.2). The required information includes the classification of the ground water under the site, the likely annual high ground water level, and a plan to protect ground water quality if the annual high ground water level is likely to be within 5 feet of the ground surface. The purpose of this information is to ensure that adequate measures are being taken to protect the ground water from contamination due to the land application of sewage sludge. If the annual high ground water level is likely to be within 5 feet of the ground surface, there is an increased potential for contamination of the ground water due to the application of sewage sludge.

Applicants for coverage to landfill sewage sludge must complete Part 2.2.2.4. The applicant is required to supply data on toxicity characteristic leaching procedure (TCLP) tests and paint filter tests and total solids tests conducted during the previous three years or else a sample shall be collected , analyzed, and the results reported. The purpose of this information is to demonstrate that the sewage sludge is of acceptable quality for being landfilled. The applicant is also required to provide a brief description of how the applicable vector attraction reduction limitations in Part 4.1.1.2 will be met and give the name and location of landfills currently receiving sewage sludge from the facility/operation.

Part 2.2.2.5is for applicants requesting coverage to surface dispose of sewage sludge. The applicant must provide information about each active surface disposal site, data on metals and total solids, brief descriptions of how the applicable vector attraction reduction requirements and pathogen

requirements will be met, a summary of data that will show that the sewage sludge can comply with the applicable pathogen requirements, and a summary of ground water monitoring and methane gas monitoring data. To show the ability to comply with the pathogen requirements, the applicant may submit monitoring data for fecal coliforms, data for the applicable process requirements (e.g., time and temperature for sludge digestion, etc.,) or a signed certified statement that the sludge is covered with soil or other material in the sewage sludge unit at the end of each operating day. The analytical data for metals and pathogens shall be based on a minimum of three sampling events that occurred at least one month apart and the data shall be no more than four and one-half years old. These requirements are similar to those in EPA's new applications forms for sewage sludge (Form 2S). New facilities/operations that do not yet have the required sewage sludge monitoring data shall submit the required data separately within six (6) months after the start of surface disposal of sewage sludge. The data shall be based on a minimum of three (3) sampling events and the samples shall be collected in accordance with the requirements of Part 4.1.4 of the permit. New operations that surface dispose of sewage sludge, but do not treat it, are required to submit all of the required data with the NOI. The necessary data should be available from the facility/operation that treats the sewage sludge. When a permittee wants to add a include a new surface disposal site to coverage under the general permit more than six months after start of coverage under this permit, the permittee shall submit an addendum to its NOI with the required information at least 90 days before the planned start of surface disposal at the site. Coverage for the additional surface disposal sites (not identified in the original NOI) does not begin until the applicant receives written notification of coverage from the permit issuing authority.

Part 2.2.3 is for wastewater lagoon systems wanting to land apply sewage sludge on a limited basis under the provisions for Category 3. Information on the location of the land application site(s) and sludge quality data must be provided. The sludge data requirements are somewhat different than for Category 2. Unless otherwise specified, all samples are to be **collected no more than 63 days (9 weeks) prior to the submittal of the NOI**. Samples are to be collected from each sludge body from which sludge is to be land applied. Each lagoon cell, each sewage sludge cell, and each pile of sewage sludge are considered individual sludge bodies. However, only those sludge bodies from which sewage sludge is to be land applied need to be sampled. The permit specifies the minimum number of discrete samples to be collected (based on the design average flow of the wastewater lagoon system) and the number of composite samples to be derived from the discrete samples. **The discrete samples are to be representative**. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the Region VIII Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. It is recommended that the applicant contact the Region VIII Biosolids Coordinator before starting to collect samples to discuss the applicants plan for sample collection and the land application of the sewage sludge. If the applicant wants approval to land apply the sewage sludge at a rate greater than one (1) dry metric ton (dmt) per acre, the applicant must also submit data on the nitrogen and phosphorus content of the sludge and the nitrogen and available phosphorus concentrations of the soils at the land application sites. Sampling requirements are specified in the permit.

WHERE TO SUBMIT NOI: The address where to submit the NOI is given in Part 2.3. **A copy of the NOI is to be sent to the applicable State or Tribe.**

PROTECTION OF PUBLIC HEATH AND THE ENVIRONMENT: The mention of sewage sludge, especially in terms of land application, often raises concerns about public health and possible pollution of surface waters and ground waters. In developing the regulations for the use or disposal of sewage sludge (40 CFR Part 503), EPA took into consideration the various pathways in which sewage sludge could

present a threat to public health and/or cause environmental problems. The Part 503 regulations include a combination of requirements for sludge quality, treatment, management practices, and monitoring and reporting, with the specific requirements depending on the method of use or disposal. For the land application of sewage sludge, the requirements of the applicable Part 503 regulations include specific limitations on the concentration of metals, minimum treatment for pathogens, vector attraction reduction, and management practices that consider application rates of nutrients, set backs from surface waters, etc. The Agency believes that compliance with the requirements of the Part 503 regulations is adequate to protect public health and the environment. Since the requirements in the general permits are based on the Part 503 regulations and additional Region VIII requirements, EPA believes that the use or disposal of sewage sludge in compliance with the conditions of the permits should provide adequate protection of public health and the environment.

REQUIREMENTS FOR CATEGORY 1 (Facilities/operations that generate and/or partially treat sewage sludge, but do not use/dispose of sewage sludge.): The permit requirements for those facilities/operations covered under Category 1 are given in Part 3. Those requirements consist primarily of the annual reporting of the amount of sludge generated by the facility, the amount of sludge received from other facilities, the amount of sludge sent to other facilities, and the amount of sludge placed in storage during the reporting year. The name and location of each facility and the amount of sludge received or sent to each facility is to be reported. In addition, the annual report is to contain a brief description of the treatment of sewage sludge provided at the facility. The report is to be in letter format and is to be signed and certified in accordance with the Signatory Requirements in Part 10.7. The requirements are effective immediately upon coverageunder this part of the permit

REQUIREMENTS FOR SUBCATEGORY 2.a (Facilities/operations that land apply sewage sludge and may also generate and/or treat sewage sludge.): The specific requirements for land application of sewage sludge under Subcategory 2.a. are based primarily on 40 CFR Part 503 and are given in Part 4 of the permit. All limitations and requirements are effective immediately upon coverageunder this part of the permit. There are limitations on metals, pathogen requirements, vector attraction reduction requirements, and management practices. The permit allows for treated sludge to be used for the following, subject to specified conditions being met, with the conditions depending on the use:

1. Land applied to agricultural land, forest land, a public contact site or a reclamation site;

2. The sludge sold or given away in a bag or similar enclosure for application to the land for other than lawn or home garden use; and

3. The sludge is to be applied to a lawn or home garden.

Metals Limitations: Part 4.1.1 of the permit contains the limitations on metals for the various uses given above. The limitations are given in three different tables in Part 4.1.1.5. The values in Table 1 are maximum limitations and are not to be exceeded at any time for any land application of sewage sludge. If any of the Table 1 values are exceed, that batch of sewage sludge is not to be land applied. The values in Table 3 are monthly average limitations and if those limitations are always met (along with the Table 1 values), the sewage sludge meets the metals criteria for all three uses listed above. If the monthly average concentration of any pollutant exceeds the value listed in Table 3, the land application of that sewage sludge is limited to bulk application to agricultural land, forest land, a public contact site (e.g., parks) or a reclamation site. Any site that has received sewage sludge that exceeded any of the values in Table 3 is thereafter subject to the limitations in Table 2 **for all of the listed pollutants**. The values in Table 2 are the long term limits on the cumulative pollutant loadings. Sites subject to the Table 2 values

requires keeping track of the accumulative loading of each of the listed pollutants.

One difference between the limitations in Part 4.1.1 and the regulations given in 40 CFR Part 503.13 is that Part 4.1.1 does not contain Table 4, Annual Pollutant Loading Rates. The sewage sludge regulations (40 CFR 503.13.(a)(4) have two options for the metal limitations that apply to sewage sludge that is sold or given away in a bag or other container for application to the land. The first option (40 CFR 503.13.(a)(4)(i)) is to comply with the limitations in Table 3. The second option (40 CFR 503.13.(a)(4)(ii)) is that the annual application rate of pollutants to a site shall not exceed the limitations in Table 4 of 40 CFR 503.13. The second option has not occurred very often in Region VIII and it was decided not to include that option in this permit. If a facility/operation wants to sell sewage sludge or give away sewage sludge in a bag or container for land application under the conditions of 40 CFR 503.13.(a)(4)(ii), the facility/operation will have to obtain an individual permit that has that provision.

Pathogen Requirements: The pathogen requirements are found in Part 4.1.2 of the permit and are based on the requirements of 40 CFR 503.32. Class A pathogen requirements must be met if the sludge is to be sold or applied to a lawn or home garden. If the sludge is to be land applied to agricultural land, forest land, a public contact site, or a reclamation site, either Class A pathogen requirements or Class B pathogen requirements plus the applicable site restrictions (Part 4.1.2.3) must be met.

There are two requirements to meet the Class A pathogen requirements (Part 4.1.2.1): (1) The density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or the density of *Salmonella* bacteria in the sewage sludge shall be less than three (3) MPN per four grams of total solids (dry weight basis). These are maximum limitations and are not to be exceeded in any sample. (2) In addition to the density limitation, one of the applicable process requirements listed in the permit or 40 CFR 503.32(a)(3) through (a)(8) must be met. It is important to note that the Class A pathogen requirements must be met in the same treatment process as the vector attraction reduction requirements in Part 4.1.3 are met or in a treatment process prior to meeting the vector attraction reduction requirements in Part 4.1.3. This requirement does not apply when the vector attraction reduction requirements are met by raising the pH as specified in Part 4.1.3.6.

In order to meet the Class B pathogen requirements (Part 4.1.2.2) the geometric mean of the density of fecal coliform in a minimum of 7 samples collected over a two week period (or as approved by the permitting authority in the permittee's sampling and analysis plan (if required)) shall be less than 2,000,000 MPN per gram of total solids (dry weight basis) or else one of the specified process requirements shall be met. The Class B pathogen requirements are based primarily on 40 CFR 503.32(b)

If the sewage sludge that is being land applied is Class B with respect to pathogens, the site restrictions listed at Part 4.1.2.3 must be met. The site restrictions are based on 40 CFR 503.32(b)(5) and are intended to protect the public health.

Vector Attraction Reduction: Part 4.1.3 of the permit contains vector attraction reduction limitations for land application of sewage sludge. The basic purpose of the requirements is to either reduce the attractiveness of the sewage sludge to vectors or prevent the vectors from coming into contact with the sewage sludge when it is land applied Most of the options given for meeting the requirements are based on treatment processes that specify certain criteria be met. These treatment processes are intended to reduce the attractiveness of the sewage sludge to vectors. There are two options that involve either injecting the sewage sludge into the soil or incorporating the sewage sludge into the soil within a specified time after application. The various options are based on 40 CFR 503.33.

Self-Monitoring Requirements for Land Application: The self-monitoring requirements for the land application of sewage sludge are given in Part 4.1.4 of the permit. The self-monitoring serves the purposes of giving an indication of whether the permittee is in compliance with the conditions of the permit and provides data to aid the permittee in properly land applying the sewage sludge. Unless otherwise noted, the appropriate analytical procedures listed in Part 12 of the permit are to be used.

The permittee will need to monitor the sewage sludge for the metals listed in Part 4.1.1 and also do the necessary monitoring to show compliance with the applicable pathogen requirements and the applicable vector attraction reduction requirements. The permittee is required to provide a brief description of how the pathogen requirements and the vector attraction reduction requirements were met and to do the appropriate monitoring. For Class B pathogen requirements met by fecal coliform densities and for Class A pathogen requirements, it will be necessary to monitor the sewage sludge for the applicable pathogens. In sampling for fecal coliforms and/or *Salmonella*, a minimum of seven samples are required for each sampling event. (Note: For example, if quarterly sampling is required, a minimum of seven samples is required each quarterly event.) The samples are to be analyzed separately. They are not to be composited. This applies to the fecal coliform and/or *Salmonella* sampling for meeting the Class A pathogen requirements and for meeting the Class B pathogen requirements. If these samples are not collected from sewage sludge bodies (e.g., long-term treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.), the samples shall be collected on separate days within a two week period. It should be noted that for the analyses of fecal coliforms and *Salmonella*, the MPN procedures of analyses are to be used and that the membrane filter (MF) procedures of analyses are not acceptable. If the samples are collected from sewage sludge bodies, a minimum of seven samples shall be collected from each sludge body and analyzed separately for each sampling event. The results shall be reported in the units used in the limitations (e.g., fecal coliform, MPN/gram of total solids) For Class A pathogen requirements the samples shall be collected at approximately the time of use/disposal of the sewage sludge. In addition, for Class A pathogen requirements, the permittee shall monitor the appropriate process parameters. If the Class B pathogen requirements in Part 4.1.2.2 are met by complying with one of process requirements, the permittee shall monitor the appropriate process parameters.

The monitoring for the vector attraction reduction requirements are somewhat different when the sludge is Class A in terms of pathogen requirements. With one exception, the monitoring must show that the vector attraction reduction requirements were met in the same treatment process that the Class A pathogen requirements were met or in a treatment process that comes after the treatment process for meeting the Class A pathogen requirements. The exception is when the vector attraction reduction requirements are met by raising the pH as specified in Part 4.1.3.6 This is necessary because of the requirements of 40 CFR 503.32(a)(2) for Class A pathogen requirements.

The permittee is required to monitor the sewage sludge that is land applied for ammonia (as N), total Kjeldhal nitrogen (TKN), organic nitrogen, nitrates (as N), total phosphorus (as P), and total solids (percent solids). The nitrogen parameters and the phosphorus shall be reported as percent (%) of total solids (dry weight basis). The information on the nitrogen content of the sewage sludge is necessary to determine maximum acceptable application rates of sewage sludge so as not to exceed the agronomic rate for available nitrogen (See Part 4.2.4) The phosphorus data will show the amount of phosphorus applied to the soil. The minimum frequency of monitoring will depend on the amount of sewage sludge land applied and is specified in the permit.

The minimum monitoring frequency for metals, pathogen requirements, vector attraction reduction requirements, nitrogen, and phosphorus depends on the amount of sewage sludge land applied and is specified in the permit. If samples are collected from sewage sludge bodies (e.g., long-term

treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.) a sampling and analysis plan is to be prepared and submitted to the EPA and the State (or applicable Tribe, see Part 13) within 90 days of the date of coverageunder this permit. (If the permittee already has a sampling and analysis plan, that plan may be updated and submitted The permittee shall continue to implement the existing plan until the updated plan is implemented.) This plan is to detail how representative samples are to be obtained.Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region VIII Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. The number of samples collected will be at least as many as those that would be collected annually as required from the amount of sewage sludge land applied. If samples are not collected from sewage sludge bodies, the minimum monitoring frequency is given in a table in Part 4.1.4.5 and is based on 40 CFR 503.

Part 4.1.4.6 requires the permittee to do soil monitoring for nitrate-nitrogen where sewage sludge has been land applied during the life of this permit except when prior written approval is granted by the permit issuing authority. The purpose of this monitoring is to determine if the total amount of nitrogen being applied is in excess of the actual agronomic rate for that site. Depending on the number of sewage sludge applications during the previous five years, the average annual precipitation for the site, and whether or not the site is irrigated, deep soil monitoring may be required. The following table is to be used to determine if deep soil monitoring is required:

Number of sewage sludge applications during previous 5 years b/	Mean Annual Precipitation Based on USDA/NRCS a/	
	Less than 18 in/yr	Equal to or more than 18 in/yr
One application during previous 5 years. No irrigation	No deep soil monitoring required	No deep soil monitoring required
Two or more applications during previous 5 years. No irrigation	No deep soil monitoring required	Deep soil monitoring required
One application during previous 5 years on land that is irrigated.	No deep soil monitoring required	No deep soil monitoring required
Two or more applications during previous 5 years on land that is irrigated.	Deep soil monitoring required	Deep soil monitoring required

a/ Based on the U.S. Department of Agriculture, Natural Resources Conservation Service's "Mean Annual Precipitation Maps" available online at http://www.ftw.nrcs.usda.gov/prism/prismmaps.html.

b/ Each application of sewage sludge at or less than calculated agronomic rate.

The above table is an attempt to keep the monitoring requirements to a reasonable minimum and yet provide enough information to determine if the application rates of nitrogen are may be contributing to the contamination of the underlying ground water. Selection of the criteria for determining whether or not deep soil monitoring for nitrate-nitrogen should be required was based on consideration of the results

of studies conducted by Colorado State University (CSU) on land application of sewage sludge, monitoring results submitted in annual reports, and professional judgement. The CSU studies indicated that the application of sewage sludge at agronomic rates to dry land wheat farms in eastern Colorado did not result in the migration of significant concentrations of nitrates below the root zone of the crop. The average annual precipitation in eastern Colorado is less than 18 inches per year. The purpose of applying sewage sludge at the agronomic rate for the site is to provide the amount of nitrogen needed by the crop or vegetation grown on the land, yet minimize the amount of nitrogen in the sewage sludge that passes below the root zone to the ground water. However, even when applying sewage sludge at calculated agronomic rates, there is an increasing potential for nitrates to be leached below the root zone to the ground water in significant concentrations with increasing amounts of water, from either precipitation and/or irrigation, and as the frequency of sludge application increases. As a safeguard, the permit will require deep soil monitoring for nitrates if sewage sludge is applied more than once during the previous five years and the average annual precipitation is greater than 18 inches and/or the site is irrigated.

The average annual precipitation for a site is to be determined using the U.S. Department of Agriculture, Natural Resources Conservation Service's "Mean Annual Precipitation Maps" available online at http://www.ftw.nrcs.usda.gov/prism/prismmaps.html. There are individual maps for each of the six states in Region 8. The maps can be downloaded as a postscript file for printing on a large format printer. The maps can be viewed on the computer in pdf format using Adobe Acrobat Reader and areas of interest can be enlarged to give more detail. The maps are color coded to show areas that have annual precipitation within the same range, e.g., 16 - 18 inches per year. The lines showing the border of an area with a certain average annual precipitation range (e.g., 16 - 18 inches) contain a number giving the high end of the precipitation range (e.g., 18) for that area.

The permittee is also required (Part 4.1.4.7) to do soil monitoring for available phosphorus and soil pH. It is necessary to know the soil pH because the method of analysis to be selected for available phosphorus is dependent on soil pH. The permit specifies analytical methods that may be used to analyze for available phosphorus, with two options given for soil pH greater than 6.5 and only one method given for soil pH of 6.5 or less.

The permittee will need to do the necessary amount of monitoring to determine the amount of sewage sludge generated at the facility, the amount received form other facilities, the amount sent to other facilities, the amount placed in storage, and the amount land applied during the reporting year. For most permittees this will require routine monitoring throughout the year, but such monitoring is part of good operational practices.

Management Practices: Part 4.2 of the permit contains management practices for application of sludge to land. The basic intent of the management practices is to see that the land application of the sewage sludge is done in a manner to protect the public health and the environment. If the sludge or material derived from sludge meets the metals limits in Table 3 (Part 4.1.1), the Class A pathogen requirements in Part 4.1.2.1 and one of the first six (6) vector attraction reduction alternatives in Part 4.1.3, the management practices are not required unless requested by the permitting authority in writing. This waiver of the management practices is in accordance with the provisions of 40 CFR Part 503. The management practices specified in the permit are based primarily on the requirements of 40 CFR 503, with some paraphrasing of some of the requirement and practical interpretations based on experience in Region VIII.

Part 4.2.1 requires the permittee to provide EPA and the State or applicable tribe a current (updated) land application plan within 90 days of the date of coverageunder this permit. The permit

requires that at a minimum, the plan is to include the components listed in Section 2.5 of the 1999 version of the Region VIII Biosolids Management Handbook. Most facilities/operations that are presently land applying sewage sludge already have a land application plan and it will just be a matter of updating the plan as appropriate and submitting the plan.

Part 4.2.2 states "Application of sewage sludge shall be conducted in a manner that will not contaminate the ground water or impair the use classification for that water (if the State (or applicable Tribe, see Part 13) has classified it) underlying the sites." If the annual high water level is more than five feet below the ground surface the application of sewage sludge at agronomic rates combined with the appropriate soil monitoring is adequate to protect the ground water from contamination due to land application of sewage sludge. However, if the annual high ground water level is less than five feet below the soil surface, there is an increased potential for ground water contamination due to the normal land application of sewage sludge. As a safeguard for such situations, the permit requires the permittee to provide the following information for each existing land application site covered by the permit:

1. The classification of the ground water underlying the site, if classified by the State or applicable Tribe;

2. The likely annual high ground water level at any point under the site; and,

3. A plan to protect ground water quality if the likely annual water level at any point under the site is expected to be within five feet of the ground surface.

The information on the classification of the ground water is to be obtained from the State or applicable Tribe. Determination of the likely annual high water at any point under the site may be made using available ground water data for nearby wells, the drilling of temporary observation wells at the site, and/or other methods as appropriate. This information is to be submitted within one year after coverage under the permit begins. If a plan is required to protect ground water quality, the permittee has the flexibility of selecting the appropriate method as long as the method can be justified.

Part 4.2.4 requires that the "application of sludge shall be conducted in a manner that does not exceed the agronomic rate for available nitrogen of the crops grown on the site unless prior written approval is given by the permit issuing authority." The permittee can determine the agronomic rate following the procedure given in Section 3.5 of the 1999 version of the Region VIII Biosolids Management Handbook. The permittee will need data on the concentrations of the various forms of nitrogen and the percent solids of sewage sludge, soils data, and information on the crops. This is to be done for each site where bulk sewage sludge is to be land applied. There may be a few situations where the application of sewage sludge at rates greater than the agronomic rate may be justified, but these situations will have to be evaluated on a case-by-case basis and approval granted as appropriate.

Part 4.2.7 requires that sewage sludge not be applied to land where the soil concentration of available phosphorus exceeds specified values according to soil pH and specified analytical procedure. The purpose of this requirement is to not have the land application of sewage sludge contribute excessive runoff of phosphorus to surface waters. The soil concentration values of available phosphorus are based on recommendations from Colorado State University. The permit has a provision that the permittee may request these limits be modified if different limits would be justified based on local conditions (e.g., phosphorus index). The new limits are to be developed in cooperation with the local agricultural extension office, USDA/NRCS office, or local university. The permittee may request and EPA may approve the use of the phosphorus index or other site specific limits as a replacement for these limits.

Part 4.2.9 requires the permittee to provide certain information in the annual report if the planned crop is not grown or there is significant crop failure (e.g., significant hail damage) in the next available growing season after the land application of sewage sludge. The required information includes the crop actually grown, nitrogen requirements of the crop grown, amount of nitrogen applied in sewage sludge, and results of agronomic rate calculations based on crop actually grown. The purpose of requiring this information is to give an indication if excessive amounts of nitrogen were applied for the crop actually grown. Circumstances can result in a different crop being grown than was planned when the sewage sludge was land applied. Also, if there is significant crop failure early in the growing season, there would not be the uptake of nitrogen that had been expected.

Part 4.2.10 specifies "The sewage sludge or the application of the sewage sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after application." This is based on the requirements of 40 CFR Part 503. Since the land application of sewage sludge is normally done on existing crop land, it generally will not present a problem in relation to threatened or endangered species. However, if there is any doubt, the permittee should contact the local office of the U.S. Fish and Wildlife Service to determine if there is a potential problem.

Special Conditions on Sludge Storage for Land Application: Part 4.3 of the permit prohibits the permanent storage of sewage sludge. Written permission is required for storage of sewage sludge for more than two years and will be allowed only if it is determined that significant treatment is occurring. Otherwise, the long term storage of sewage sludge would be considered surface disposal and would need to comply with the requirements of Part 6. For those facilities/operations that temporarily store sewage sludge in lagoons, the problem can be avoided by completely emptying the lagoons every two years.

Recordkeeping for Land Application: The recordkeeping requirements are given in Part 4.4 In essence, the permittee is required to keep records of monitoring results, where sludge is land applied, the amounts applied, signed certification statement, etc. All information recorded for the year is to be reported in the annual report required in Part 8.4 of the permit. Normally records have to be kept for a minimum of five years. The exception is information for sites subject to the cumulative pollutant loading rate of Table 2. That information must be kept indefinitely.

The 503 regulations have a provision that if the permittee **prepared material derived from sludge** that meets the limits in Table 3 (Part 4.1.1), the Class A pathogen requirements in Part 4.1.2.1, and one of the first six (6) vector attraction reduction alternatives in Part 4.1.3, the permittee is not required to keep records on that material unless otherwise required by the permitting authority. However the person preparing the sewage sludge must maintain records on the sewage sludge.

REQUIREMENTS FOR SUBCATEGORY 2.b. (Facilities/operations that landfill sewage sludge and may also generate and/or treat sewage sludge.): The requirements for the landfilling of sewage sludge are given in Part 5 of the permit. The requirements include that the landfilling of sewage sludge shall only be done at municipal solid waste landfill (MSWLF) units, as defined by 40 CFR Part 258.2, that are in compliance with 40 CFR 258 (Criteria for Municipal Solid Waste Landfills) and that the sewage sludge shall not exhibit the characteristics of a hazardous waste as defined in 40 CFR 261, Subpart C, shall not contain any free water as determined by the paint filter test, and meet one of eight vector attraction reduction limitations. The last three requirements are based on 40 CFR 258, which requires that municipal solid waste landfills not accept hazardous wastes, that the wastes not have free liquids as determined by the paint filter test, and that the owner or operator of the landfill prevent or control on-site

populations of disease vectors using techniques appropriate for the protection of human health and the environment. The characteristics of a hazardous wastes as defined at 40 CFR 261, Subpart C, involve ignitability, corrosivity, reactivity, and toxicity. For sewage sludge the only one of these characteristics that is a potential concern is toxicity, which is determined by the Toxicity Characteristic Leaching Procedure (TCLP). The vast majority of sewage sludges pass the TCLP test.

The vector attraction reduction limitations are similar to those for land application of sewage sludge (Part 4.1.3), with some minor modifications. If the vector attraction reduction requirements can be met through treatment, then the sewage sludge may be used as daily cover at the landfill. If the sewage sludge does not meet the vector attraction reduction requirements through treatment, the sewage sludge must be covered daily with soil or other material as specified in Part 5.1.1.2.8 of the permit. If the permittee suspects that the daily cover requirements of 40 CFR Part 258.21 are not being met at the landfill and the sewage sludge being taken to the landfill does not meet one of the vector attraction reduction requirments of Part 5.1.1.2 through treatment, then the permittee is obligated to immediately stop taking the sewage sludge to that landfill until the problem is corrected.

If sewage sludge is to be used in the final cover of the landfill, it must meet the applicable chemical pollutant limitations for land application, pathogen requirements and applicable site restrictions, and the applicable vector attraction reduction limitations given in Parts 4.1.1, 2, and 3 of the permit. In addition, the permittee must have coverage under Part 4 of the permit for use of the sewage sludge in this manner.

Self-Monitoring Requirements: Under the self-monitoring requirements the permittee is required to do monitoring of the sewage sludge that is landfilled and provide information on the amount of sewage sludge landfilled and the landfills that receive the sewage sludge. The sewage sludge is to be monitored on a regular basis for percent total solids, free moisture content using the paint filter test, and the applicable vector attraction reduction requirements. The minimum monitoring frequency depends on the amount of sewage sludge landfilled and is specified in the permit. If samples are collected from sewage sludge bodies (e.g., long-term treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.) a sampling and analysis plan is to be prepared and submitted to the EPA and the State (or applicable Tribe, see Part 13) within 90 days of the date of coverageunder this permit. (If the permittee already has a sampling and analysis plan, that plan may be updated and submitted The permittee shall continue to implement the existing plan until the updated plan is implemented.) This plan is to detail how representative samples are to be obtained. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the Region VIII Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. The number of samples collected will be at least as many as those that would be collected annually as required from the amount of sewage sludge landfilled If samples are not collected from sewage sludge bodies, the minimum monitoring frequency is given in a table in Part 5.1.2.2 and is based on 40 CFR 503.

At least once during the life of the permit the sludge shall be tested for toxicity using the TCLP. Additional monitoring may be required by the operator of the landfill or the permit issuing authority.

The permittee will need to do the necessary amount of monitoring to determine the amount of sewage sludge generated at the facility, the amount received form other facilities, the amount sent to other facilities, the amount placed in storage, and the amount landfilled during the reporting year. For most permittees this will require routine monitoring throughout the year, but such monitoring is part of good operational practices.

Recordkeeping Requirements: The permittee is required to keep records for at least five years of the results of various monitoring and data collection required under the self-monitoring requirements, Part 5.1.2; a description of how the vector attraction reduction requirements were met and the results of any monitoring; documentation that the landfill(s) receiving the sludge was in compliance with the requirements of 40 CFR Part 258; and a signed certification statement. A written statement from the appropriate regulatory authority that the landfill was in compliance with 40 CFR Part 258 during the past year is adequate documentation for that requirement.

REQUIREMENTS FOR SUBCATEGORY 2.c. (Facilities/operations that surface dispose of sewage sludge and may also generate and/or treat sewage sludge.): The specific requirements for surface disposal of sewage sludge under Subcategory 2.c. are based primarily on 40 CFR Part 503 and are given in Part 6 of the permit. All limitations and requirements are effective immediately upon coverageunder this part of the permit. There are limitations on metals, pathogen requirements, vector attraction reduction requirements, and management practices requirements, including the requirement that the sewage sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after surface disposal..

Metal Limitations: Part 6.1.1 contains the limitations on arsenic, chromium, and nickel that apply to the surface disposal of sewage sludge. It should be noted that the limitations for each pollutant vary somewhat with the minimum distance from the sewage sludge unit to the property line of the surface disposal site. When the distances is 150 meters or greater, the limitations remain the same. The limitations are not to be exceeded at any time and are based of 40 CFR 503.23.

Pathogen Requirements: In order to meet the pathogen requirements, the sludge must either meet the Class B pathogen requirements or be covered at the end of each operating day. In order to meet the Class B pathogen requirements (Part 6.1.2) the geometric mean of the density of fecal coliform in a minimum of 7 samples collected over a two week period (or as approved by the permitting authority in the permittee's sampling and analysis plan (if required)) shall be less than 2,000,000 MPN per gram of total solids (dry weight basis) or else one of the specified process requirements shall be met. The Class B pathogen requirements are based on 40 CFR 503.32(b).

Vector Attraction Reduction: The vector attraction reduction limitations for surface disposal of sewage sludge (Part 6.1.3) are essentially the same as for land application of sewage sludge (Part 4.1.3) and serve the same purpose. The only difference is that the options for surface disposal include covering the sewage sludge with soil or other material at the end of each operating day. The requirements are based on 40 CFR 503.

Self-Monitoring Requirements: The permit (Part 6.1.4) requires the permittee to monitor the sewage sludge that is surface disposed for the metals limited in Part 6.1.1, describe how the pathogen requirements were met and do the appropriate monitoring, and describe how the vector attraction reduction requirements were met and do the appropriate monitoring. For the pathogen requirements and the vector attraction reduction requirements, monitoring may not be necessary, depending on how those requirements were met.

The minimum monitoring frequency for metals, pathogen requirements, and vector attraction reduction requirements depends on the amount of sewage sludge surface disposed and is specified in the permit. If samples are collected from sewage sludge bodies (e.g., long-term treatment piles, compost

piles, drying beds, storage piles, lagoon cells, etc.) a sampling and analysis plan is to be prepared and submitted to the EPA and the State (or applicable Tribe, see Part 13) within 90 days of the date of coverageunder this permit. (If the permittee already has a sampling and analysis plan, that plan may be updated and submitted The permittee shall continue to implement the existing plan until the updated plan is implemented.) This plan is to detail how representative samples are to be obtained. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the Region VIII Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. The number of samples collected will be at least as many as those that would be collected annually as required from the amount of sewage sludge surface disposed. If samples are not collected from sewage sludge bodies, the minimum monitoring frequency is given in a table in Part 6.1.4.4 and is based on 40 CFR Part 503.

The permittee will need to do the necessary amount of monitoring to determine the amount of sewage sludge generated at the facility, the amount received form other facilities, the amount sent to other facilities, the amount placed in storage, and the amount surface disposed during the reporting year. For most permittees this will require routine monitoring throughout the year, but such monitoring is part of good operational practices.

If cover is placed on an active sewage sludge unit, the permittee is required to continuously monitor for methane gas in all structures located within the surface disposal site and to submit for approval and fully implement a plan for (1) continuously monitoring for methane gas in the air at the property line of the surface disposal site and (2) for monitoring for methane gas in the soil at the property line of the surface disposal site. The purpose of this monitoring is to determine if the best management practices requirements of Part 6.2.11 are being met and that methane gas is not migrating off the site via the soil in concentrations greater than the lower explosive limit for methane gas. The plan is to be submitted within 180 days of the date of coverageunder the permit and to fully implement the plan within 90 days after submittal of the plan unless otherwise directed by the permit issuing authority.

The permittee is required to submit for approval and fully implement a ground water monitoring plan for each surface disposal site. The purpose of the plan shall be to determine if material leached from the sewage sludge unit is increasing the concentration of nitrates in the ground water and to provide a method of determining if the placement of sewage sludge in the sewage sludge unit should be terminated. This is a method of determining if the best managements in Part 6.2.16 on nitrate contamination of ground water are being met. The plan is to be submitted to EPA and the State (or applicable Tribe) within 180 of the date of coverageunder the permit and is to be fully implemented within 90 days after submittal of the plan unless otherwise directed by the permit issuing authority.

Management Practices: Part 6.2 contains management practices that apply to surface disposal of sludge. The requirements are based primarily on 40 CFR 503.24 and are primarily intended to prevent the location and/or operation of the sewage sludge unit from causing environmental problems or present a public health concern. The management practices involve such things as not causing harm to an endangered or threatened species; location with respect faults, high ground water areas, and areas subject to flooding; runoff controls; leachate collection; limitations on the concentrations of methane gas in any structure on the site and at the property line; etc. There also is the requirement to conduct routine inspections to prevent malfunctions and deteriorations, operator errors, and discharges which may cause or lead to the release of sludge to the environment, a threat to human health, or a nuisance. The permittee is to keep a log of inspections.

Special Conditions for Surface Disposal: The special conditions in Part 6.3 require the following: 1. Additional sewage sludge shall not be placed on an active sewage unit if sewage sludge placed previously on the sewage sludge unit contaminated an aquifer; 2. A written closure and post closure plan be developed and submitted to the permitting authority for approval 180 days prior to the date that the closure is planned to start; 3. Written notification be provided by the owner of a surface disposal site to the subsequent owner of the surface disposal site that sewage sludge was placed on the land; and 4 Permanent storage of sewage sludge is prohibited.

Recordkeeping Requirements for Surface Disposal: The permittee is required to keep records for at least five years of the results of various monitoring and data collection required under the self-monitoring requirements, Part 6.1.4; a description of how the pathogen requirements, the vector attraction reduction requirements, and the management practices requirements were met and the results of any monitoring; and a signed certification statement. This is in accordance with the requirements of 40 CFR 503. All information recorded for the year is to be reported in the annual report required in Part 8.4 of the permit.

REQUIREMENTS FOR CATEGORY 3: (Limited land application of sewage sludge from wastewater lagoons) The requirements for Category 3, given in Part 7, were specifically selected to meet the needs of the "typical" lagoon systems that occasionally needs to use/dispose of sewage sludge and land application is the most practical method available. In developing the requirements, it was assumed that the facilities had limited treatment options available to them and the requirements of the permit should be relatively straight forward. The requirements include limitations on metals, pathogen requirements and site restrictions, vector attraction reduction requirements, and specified management practices.

Metal Limitations: The limitations on metals are given in Part 7.1.1. Unlike the metal limitations for land application of sewage sludge under subcategory 2.a., there is only one set of metal limitations for Category 3. The numeric values for the limitations were taken from Table 3 of 40 CFR 503.13. However, the limitations in Table 3 are monthly average and the metal limitations for Category 3 are maximum limitations not to be exceed in any sample. The reason for this approach is that the sampling will be done from sewage sludge bodies (e.g., storage piles, lagoon cells, etc) and in many cases only one composite sample will be collected per sludge body and that sample will be collected as part of the process for submitting the NOI. If the metals limitations for Category 3 are met, the 40 CFR 503 requirements on metals for land application of sewage sludge will be met. Region VIII's experience is that most lagoon facilities will be able to meet the metal limitations. The exceptions tend to be facilities that have significant input of metals from industrial users.

Pathogen Requirements and Site Restrictions: To meet the pathogen requirements in Part 7.1.2 the permittee has the option of meeting the fecal coliform density limitation of a geometric mean of 2,000,000 MPN per gram of total solids (dry weight basis) or or one of the following:

1. The sewage sludge has been treated in one of the Processes to Significantly Reduce Pathogens described in Appendix B of 40 CFR Part 503; or

2. The sewage sludge has been treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permit issuing authority.

These two options are in accordance with the provisions of 40 CFR 503.32(b)(3) and (4). To date it has been the experience of EPA Region VIII that the sewage sludge from lagoon systems can meet the fecal coliform density requirements. However, the Region wants to retain the flexibility of using another

method to meet pathogen requirements in case it is necessary.

In addition to the pathogen requirements, site restrictions must be met at the sites where the sewage sludge is land applied. The site restrictions are based on the requirements of 40 CFR 503 for the land application of sewage sludge that is Class B in terms of pathogens. It is considered unlikely that the sewage sludge from most lagoon systems can meet Class A pathogen requirements.

Vector Attraction Reduction Requirements for Limited Land Application: To meet the vector attraction reduction requirements (Part 7.1.3 of the permit) the permittee has the choice of injecting the sewage sludge below the surface of the land (Part 7.1.3.1), incorporate the sewage sludge into the soil within six (6) hours after application (Part 7.1.3.2), or raising the pH of the sewage sludge to 12 or higher as specified in Part 7.1.3.3. For most lagoon systems, injecting or incorporating the sewage sludge into crop land is the most practical method of meeting the vector attraction reduction requirements. There may be some situations where injection or incorporation may not be practical, then the permittee would have to use the pH adjustment option. The 503 regulations have other options for meeting the vector attraction reduction requirements, but they have not been included in the permit for Category 3 because they are considered impractical for lagoon systems. The permitee has the option for applying for coverage under Category 2 if another option must be used.

Management Practices for Limited Application of Sewage Sludge to Land: The management practices requirements are in Part 7.2 and many of them are similar to those for land application of sewage sludge under Subcategory 2.a. There are two notable exceptions. One is that the application of sewage sludge shall not exceed one (1) dry metric ton (dmt) per acre unless otherwise approved in writing by the permit issuing authority. At that application rate it is very unlikely that the sewage sludge will cause problems with excess nitrogen and/or phosphorus at the application site. During the application process, the applicant may request permission to land apply sewage sludge at rates greater than one dmt per acre. To support the request, the applicant must submit data on the nitrogen and phosphorus content of the sewage sludge and soil data for each proposed application site. The permit issuing authority makes the determination if higher application rates would be acceptable and must give prior permission in writing.

The other exception is that the application of sewage sludge to each site is limited to one application during a twenty (20) year period. This is intended as an additional precaution in protecting the land application sites.

Self-Monitoring Requirements for Limited Land Application of Sewage Sludge to Land: The self-monitoring requirements are specified. in Part 7.1.4 of the permit. The permittee is required to monitor annually starting the year the land application starts and continuing until the land application is completed. Annual reports are to be submitted for each calendar year during which land application occurs. For the first 12 months of land application (i.e. starting when the land application of the sewage sludge begins) the permittee may use the applicable data that was submitted with the NOI. That would include the metals data and any fecal coliform data submitted with the NOI. If the land application of sewage sludge is still occurring 12 months after the start of land application, new data must be collected for each additional year. It is anticipated that the limited land application of sewage sludge covered under Category 3 usually will be completed in less than 12 months. The minimum frequency of monitoring is annually. For some sludge related activities, e.g., meeting the pathogen requirements by means of pH adjustment, more frequent monitoring is required.

Recordkeeping for Limited Application of Sewage Sludge to Land: The recordkeeping requirements are similar to those for the subcategories in Category 2. All of the information shall be kept for at least five

years. In addition to information about meeting pathogen requirements, vector attraction reduction requirements, site restrictions, management practices, and any monitoring done, the permittee is required to keep information about each land application site and the rate that the sewage sludge is applied. The records also are to include a signed certification statement about the information.

REPORTING OF MONITORING RESULTS AND OTHER INFORMATION: The reporting requirements are given in Part 8.4 of the permit Routine reporting of monitoring results and other information will be on an annual basis, with reports **due no later than February 19 of each year**. Each report is to be for the previous calendar year and shall contain all the sewage sludge related information that the permit requires to be recorded for the year. The report shall include all of the monitoring results, the required information on pathogen requirements, vector attraction reduction requirements, management practices, land application sites (including amounts of sewage sludge applied), and site restrictions, and the required signed certification statements. The EPA presently does not have a standard form for reporting sewage sludge monitoring results or other information required by the permit to be reported. It was decided that unless otherwise approved by the permit issuing authority, the permittee shall submit the report on letter size (8.5" x 11") paper. Monitoring results may be reported in the testing laboratory's normal format, and may be photocopies of the laboratory reports. This would be convenient for small facilities/operations that do not have much data to report and have limited staff for preparing reports. The permittee may enter as much of the information as appropriate into the EPA's Biosolids Data Management System (BDMS) computer program and submit hard (printed) copies of the report. This would be convenient for facilities/operations that have lots of information to report and a significant amount of the information can be entered into BDMS. It is intended that the reporting requirements of this permit may be changed without going to public notice if the EPA develops other procedures for submitting reports (e.g., electronic format). Along with the report from the BDMS program, it would be necessary to submit the appropriate signed certification statements and other information that cannot be entered into the BDMS program. The BDMS program may be downloaded from the Region 8 Biosolids Management Program's WEB page. The URL for the BDMS is http://www.epa.gov/region08/water/wastewater/biohome/bdms/bdms.html.

The reports are to be signed in accordance with the Signatory Requirements given in Part 10.7 of the permit and submitted to the Region and to the State or applicable tribe.

Twenty-four Hour Notice of Noncompliance Reporting These reporting reporting requirements are given in Part 8.6 of the permit. The wording has been changed from that typically used in a permit for point source discharges to wording that is more appropriate for a permit for biosolids. The permit requires the permittee to report any noncompliance, including transportation accidents, spills, and uncontrolled runoff from sewage sludge transfer sites, storage sites, or land application sites, etc., which may seriously endanger health or the environment, as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. In addition, the permittee shall report within 24 hours by telephone by the first workday following the day the permittee becomes aware of the circumstances:

Any violation of a maximum pollutant limitation for any of the chemicals listed in Table 1 of Part 4.1.1.5 for sewage sludge that has been distributed or land applied;

Any violation of the Class A pathogen requirements in Part 4.1.2.1 for sewage sludge that has been distributed or land applied such that there is a reasonable risk of public exposure to the sewage sludge;

Any violation of the limitations on arsenic, chromium, and nickel in Part 6.1.1.2 for sewage

sludge that has been disposed of in a surface disposal site."

The limitations identified above are risk based and are maximum limitations not to be exceeded at any time. EPA believes that any time those limitations are exceeded, it should be reported promptly. The sewage sludge must have been distributed, land applied, or disposed of, whichever is applicable, before it is necessary to report under the 24-hour reporting requirements. This takes into consideration potential risk to public health and the environment. The permit also requires a written submission within five days of the time that the permittee becomes aware of the circumstances. The permit does not have a provision for the Director to waive the written report because Region 8 wants a written report on all incidents that were reported under the 24-hour reporting requirements.

SECTION 401(A)(1) CERTIFICATION: Certification of permits in accordance with Section 401(a)(1) of the Clean Water Act is for discharges to Waters of the United States. Since these permits do not authorize the discharge of sewage sludge to waters of the United States, the EPA will not be certifying the permits or requesting certification from the States or those Tribes that have Clean Water Act §401(a)(1) certification authority.

PERMIT DURATION: The permit will be issued for a period of five years, with the effective date and expiration date determined at the time of permit issuance.

MISCELLANEOUS: Part 11 of the permit contains a list of definitions. Most of the definitions come from the sewage sludge regulations (40 CFR 503), but are a few of the definitions are those used by Region VIII in permits. Part 12 contains a list of analytical methods that have been approved for use in the analysis of sewage sludge.

Permit and Fact Sheet drafted by:

Robert D. Shankland
Senior Environmental Employee
EPA Region VIII (8P2-W-P)
March 18, 2002

Permit and Fact Sheet reviewed by:

Robert Brobst
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EPA Region VIII (8P2-W-P)

ATTACHMENT 1
ADDRESSES AND TELEPHONE NUMBERS OF ENVIRONMENTAL DIRECTORS FOR INDIAN TRIBES THAT MAY BE AFFECTED BY THIS GENERAL PERMIT

LIST OF ENVIRONMENTAL COORDINATORS FOR APPLICABLE TRIBES IN COLORADO

Southern Ute Indian Reservation **Southern Ute Indian Tribe**	**Ute Mountain Indian Reservation** **Ute Mountain Ute Tribe**
Director, Environmental Programs Southern Ute Indian Tribe P.O. Box 737 Ignacio, CO 81137 (970) 563-0135	Director of Environmental Programs Ute Mountain Ute Tribe P.O. Box 448 Towaoc, CO 81334 (970) 564-5432

LIST OF ENVIRONMENTAL COORDINATORS FOR APPLICABLE TRIBES IN MONTANA

Blackfeet Indian Reservation **Blackfeet Tribe**	**Crow Indian Reservation** **Crow Tribe**
Director of Environmental Program Blackfeet Tribe P.O. Box 2029 Browning, MT 59417 (406) 338-7421	Environmental Director Crow Tribe P.O. Box 159 Crow Agency, MT 59022 (406) 638-2962
Flathead Indian Reservation **Confederated Salish & Kootenai Tribes**	**Fort Belknap Indian Reservation** **Gros Ventre & Assiniboine Tribes**
Manager, Division of Environmental Protection Flathead Indian Reservation P.O. Box 278 Pablo, MT 59855-0278 (406) 675-2700 Ext 1230	Environmental Protection Program Manager Fort Belknap Environmental Program RR1 Box 66 Harlem, MT 59526 (406) 353-8429
Fort Peck Indian Reservation **Assinibonie & Sioux Tribes**	**Northern Cheyenne Indian Reservation** **Northern Cheyenne Tribe**
Environmental Program Manager Assiniboine & Sioux Tribes P.O. Box 1027 Poplar, MT 59255 (406) 768-5155 Ext. 399	Director, Environmental Protection Department Northern Cheyenne Tribe P.O. Box 128 Lame Deer, MT 59043 (406) 477-6503
Rocky Boy's Indian Reservation	
Chippewa Cree Tribe Natural Resources Director Chippewa Cree Tribe of the Rocky Boy's Reservation RR1, Box 800 Box Elder, MT 59521-9724 (406) 395-4225	

LIST OF ENVIRONMENTAL COORDINATORS FOR APPLICABLE TRIBES IN NORTH DAKOTA

Fort Berthold Indian Reservation **Three Affiliated Tribes**	**Fort Totten Indian Reservation** (Also known as Devils Lake Indian Reservation) **Spirit Lake Tribe**
Director, Environmental Division Three Affiliated Tribes 204 West Main New Town, ND 58763 (701) 627-4569	Tribal Environmental Administrator Spirit Lake Tribe P.O. Box 99 Fort Totten, ND 58335 (701) 766-1208
Standing Rock Indian Reservation **Standing Rock Sioux Tribe**	**Turtle Mountain Indian Reservation** **Turtle Mountain Band of Chippewas**
Director of Environmental Department Standing Rock Sioux Tribe P.O. Box 516 Fort Yates, ND 58538 (701) 854-3823 or 3824	Director of Tribal Environmental Program Turtle Mountain Band of Chippewas P.O. Box 570 Belcourt, ND 58316 (701) 477-9560

LIST OF ENVIRONMENTAL COORDINATORS FOR APPLICABLE TRIBES IN SOUTH DAKOTA

Cheyenne River Indian Reservation **Cheyenne River Sioux Tribe**	**Crow Creek Indian Reservation** **Crow Creek Sioux Tribe**
Director, Environmental Protection Department Cheyenne River Sioux Tribe P.O. Box 590 Eagle Butte, SD 57625 (605) 964-6558 or 6559	Environmental Director Crow Creek Sioux Tribe P.O. Box 380 Fort Thompson, SD 57339 (605) 245-2212 or (605) 245-2736
Flandreau Indian Reservation **Flandreau Santee Sioux Tribe**	**Sisseton-Wahpeton Sioux Tribe**
Natural Resources Director Flandreau Santee Sioux P.O. Box 283 Flandreau, SD 57028 (605) 997-5123	Office Administrator Sisseton-Wahpeton Sioux Tribe P.O. Box 509 Agency Village, SD 57262-0509 (605) 698-4998 / 1-800-338-3180
Lower Brule Indian Reservation **Lower Brule Sioux Tribe**	**Pine Ridge Indian Reservation** **Oglala Sioux Tribe**
Environmental Coordinator Lower Brule Sioux Tribe 1870 Oyate Circle Lower Brule, SD 57548 (605) 473-0163	Environmental Director Oglala Sioux Tribe P.O. Box 2008 Pine Ridge, SD 57770 (605) 867-1845
Rosebud Indian Reservation **Rosebud Sioux Tribe**	**Yankton Indian Reservation** **Yankton Sioux Tribe**

Director Office of Water Resources Rosebud Sioux Tribe P.O. Box 430 Rosebud, SD 57570 (605) 747-2559	Director Environmental Protection Program Yankton Sioux Tribe P.O. Box 248 Marty, SD 57361 (605) 384-3641

LIST OF ENVIRONMENTAL COORDINATORS FOR APPLICABLE TRIBES IN UTAH

Northern Shoshoni Indian Reservation **Northwestern Band of Shoshoni Nation**	**Paiute Indian Reservations** **Paiute Tribe**
GAP Coordinator Northwestern Band of Shoshoni Nation 427 N. Main, Suite 101 Pocatello, Idaho 83204 (208) 478-5712	Environmental Director Paiute Tribe of Utah 440 North Paiute Drive Cedar City, UT 84720 (435) 586-1112 Ext 133
Skull Valley Indian Reservation **Skull Valley Band of Goshute Indians**	**Uintah and Ouray Indian Reservation** **Ute Indian Tribe**
Vice Chairperson SVGB TEPA 3359 S. Main Street Salt Lake City, UT 84115 (801) 487-5678	Environmental Coordinator Ute Indian Tribe P.O. Box 460 Fort Duchesne, UT 84026 (435) 722-9910

LIST OF ENVIRONMENTAL COORDINATORS FOR APPLICABLE TRIBES IN WYOMING

Wind River Indian Reservation **Northern Arapaho Tribe**	**Wind River Indian Reservation** **Eastern Shoshone Tribe**
Executive Director for Environmental Quality Wind River Indian Reservation P.O. Box 217 Fort Washakie, WY 82514 (307) 332-3164	Executive Director for Environmental Quality Wind River Indian Reservation P.O. Box 217 Fort Washakie, WY 82514 (307) 332-3164